

Date: Friday, 04/04/2008 9:22:12 AM  
 User: Julie Lecocq

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : AFT CROSSTUBE
<b>Job Number</b> : 38401	
<b>Estimate Number</b> : 10377	
<b>P.O. Number</b> :	<b>Part Number</b> : D2890
<b>This Issue</b> : 04/04/2008 <b>S.O. No.</b> :	<b>Drawing Number</b> : D2890 REV B
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : / / <b>Type</b> : PURCHASED PARTS	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 38400	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 30/04/2008 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <u>JO 08.04.4</u>	
<b>Comment</b> : Est. D 05.03.21 Removed Bending procedures KJ/JLM	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6008180	Crosstube extrusion
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part #	Description	Batch
1	D6008-180	Crosstube extrusion	B34688

EL 8-4-25

2.0	BENDING	BENDING MACHINE - SKIDTUBES
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**Comment:** BENDING MACHINE

1-Bend D2890 as per Dwg D2890 and Folio FT002

EL 8-4-28

3.0	QC6	DIMENSIONAL CHECK
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**Comment:** DIMENSIONAL CHECK

08-04-28

4.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
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**Comment:** LANDING GEAR RESOURCE 1

1-Deburr and Polish

5.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
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**Comment:** HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

N/A USED ON B38620

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D 2890 PAR #: N/A Fault Category: Prod / x tube NCR: Yes No DQA: D Date: 08/05/01  
 QA: N/C Closed: D Date: 08/11/01

NCR: 38401		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08.04.28	2	widths are narrow Tube over bent. SEE DIM SHEET.	CP 08.04.28 pu 08/04/2	Cut @ 30.0" HIGH Tube acceptable			CP 08.04.28 pu 08/04/2	
08.04.28	2	widths too narrow Over bent. SEE DIM SHEET	CP 08.04.28 pu 08/04/2	Cut @ 30.0" HIGH Tube OK	EL 8-5-1	08/05/01	CP 08.04.28 pu 08/04/2	08/05/01

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:22:12 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT CROSSTUBE

Job Number: 38401

Part Number: D2890

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



*N/A USED ON B 38620*



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *cut to 107-B38620*

*12-8-420*

8.0

QC21

FINAL INSPECTION/W/O RELEASE



*08/05/01*

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



*u 28/04-30*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

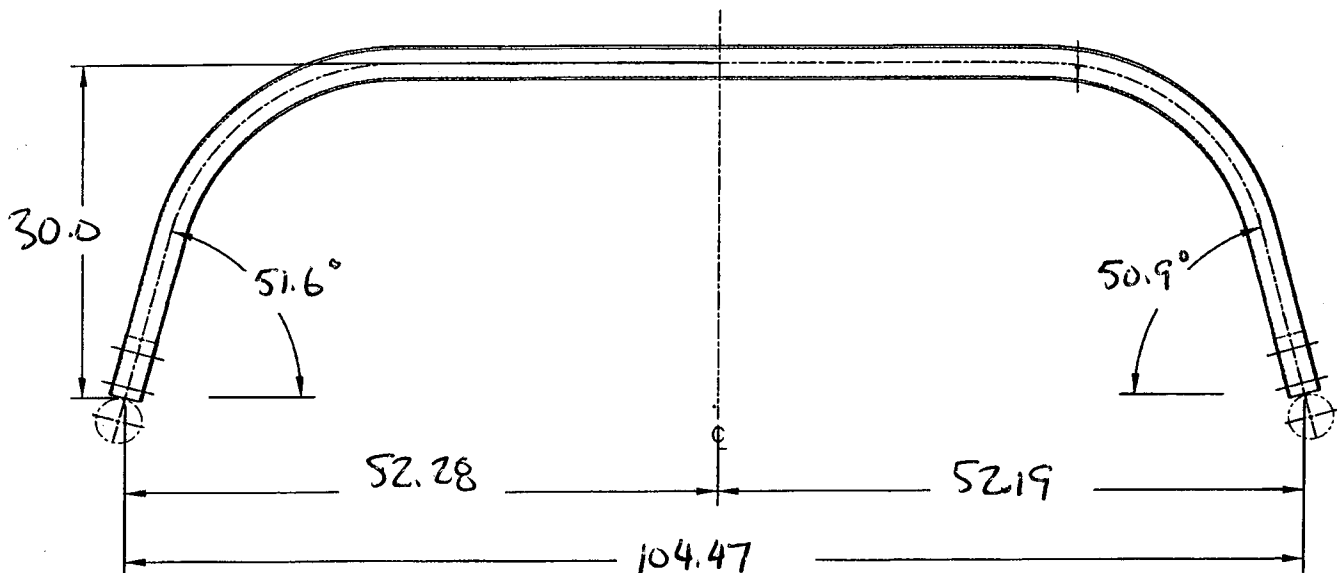
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	38401
Description: Crosstube Aft		Part Number:	D2890
Inspection Dwg: D2890		Rev: B	Page 1 of 1

Required Dimension	Min	Max
Height	49.875	50.125
1/2 Span	69.275	69.525
Angle	49	52
Total Span	138.55	139.05



Comments
Tube acceptable
used on B38620

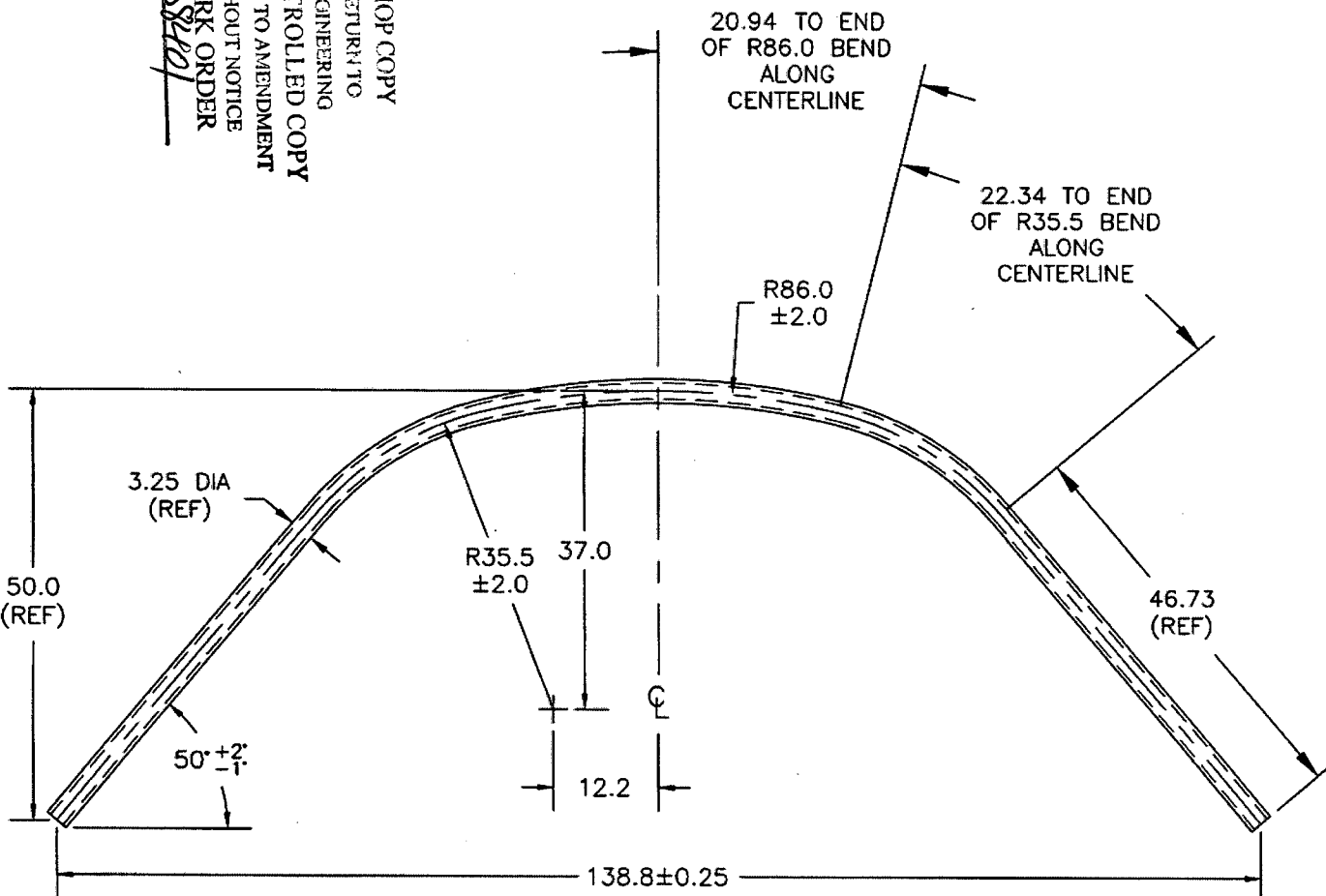
QC15 Inspection	08.04.28
Date	CP

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	[Signature]



RELEASED  
02.10.28

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. B
		D2890	SHEET 1 OF 1
DATE		TITLE	SCALE
02.10.18		AFT CROSS TUBE	1:20
A	99.05.21	NEW ISSUE	
B	02.10.18	ADD TANGENT LENGTHS; CHANGE NOTES	



#### NOTES

- 1) MATERIAL: MANUFACTURE FROM D6008-180 (ø3.25 OD x 0.438 WALL)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BEND PROGRESSIVELY WITH MINIMUM OF 3 PASSES
- 6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

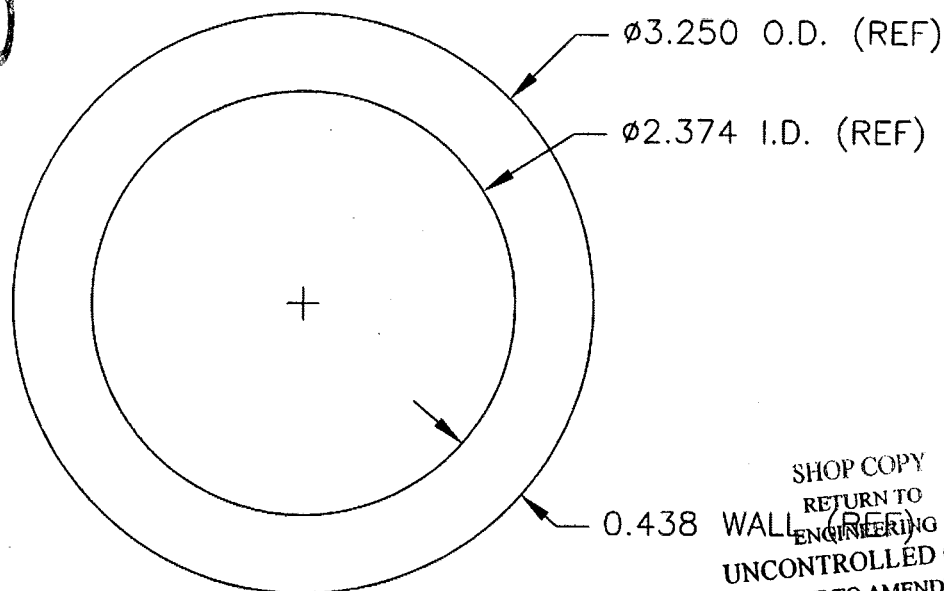
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WITHOUT NOTICE  
WORK ORDER  
NO. 38401



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6008	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

**RELEASED**  
00.11.24 *[Signature]*



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NO. 38401

### NOTES

- 1) D6008-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 180" LONG TUBE: D6008-180

- 2) MATERIAL: 3.250 OD x 0.438 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.044$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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